

ABSTRACT OF THE DISCLOSURE

An architecture or layout for microchannel arrays using T or Cross (+) loading for electrophoresis or other injection and separation chemistry that are performed in microfluidic configurations. This architecture enables a very dense layout of arrays of functionally identical shaped channels and it also solves the problem of simultaneously enabling efficient parallel shapes and biasing of the input wells, waste wells, and bias wells at the input end of the separation columns. One T load architecture uses circular holes with common rows, but not columns, which allows the flow paths for each channel to be identical in shape, using multiple mirror image pieces. Another T load architecture enables the access hole array to be formed on a biaxial, collinear grid suitable for EDM micromachining (square holes), with common rows and columns.